

Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1 (Original): An amine-extended polyetherurethaneurea (PEUU) elastomer comprising the reaction product of:

- a) an isocyanate-terminated prepolymer having a free NCO group content of from about 1 to about 2%, which is the reaction product of,
 - (i) a stoichiometric excess of at least one isocyanate,
 - (ii) an isocyanate-reactive component containing a blend of a glycol and one or more ultra-low monol diols having a molecular weight of at least about 4,000 Da and an unsaturation of less than about 0.010 meq/g, and optionally,
 - (iii) a catalyst;with
 - b) a mixture of at least about 40 mole % of ethylene diamine (EDA) and up to about 60 mole % of at least one aliphatic, asymmetric co-diamine,
- wherein reaction of a) and b) is carried out in a polar, aprotic solvent.

Claim 2 (Original): The amine-extended polyetherurethaneurea (PEUU) elastomer according to Claim 1, wherein the glycol is chosen from tripropylene glycol (TPG), dipropylene glycol (DPG), propylene glycol (PG), polypropylene glycol (PPG) and polytetramethylene ether glycol (PTMEG).

Claim 3 (Original): The amine-extended polyetherurethaneurea (PEUU) elastomer according to Claim 1, wherein the blend has a number average molecular weight of between about 2,000 Da and about 9,000 Da.

Claim 4 (Original): The amine-extended polyetherurethaneurea (PEUU) elastomer according to Claim 1, wherein the blend has a number average molecular weight of between about 2,300 Da and about 3,700 Da.

Claim 5 (Original): The amine-extended polyetherurethaneurea (PEUU) elastomer according to Claim 1, wherein the one or more ultra-low monol diols has a molecular weight of at least about 6,000 Da.

Claim 6 (Original): The amine-extended polyetherurethaneurea (PEUU) elastomer according to Claim 1, wherein the one or more ultra-low monol diols has a molecular weight of at least about 8,000 Da.

Claim 7 (Original): The amine-extended polyetherurethaneurea (PEUU) elastomer according to Claim 1, wherein the glycol is tripropylene glycol (TPG).

Claim 8 (Original): The amine-extended polyetherurethaneurea (PEUU) elastomer according to Claim 1, wherein the unsaturation of the one or more ultra-low monol diols is less than about 0.007 meq/g.

Claim 9 (Original): The amine-extended polyetherurethaneurea (PEUU) elastomer according to Claim 1, wherein the unsaturation of the one or more ultra-low monol diols is less than about 0.005 meq/g.

Claim 10 (Original): The amine-extended polyetherurethaneurea (PEUU) elastomer according to Claim 1, wherein the at least one isocyanate is chosen from 1,2-ethylene diisocyanate, 1,3-propylene diisocyanate, 1,4-butylene diisocyanate, 1,6-hexylene diisocyanate, 1,8-octylene diisocyanate, 1,5-diisocyanato-2,2,4-trimethylpentane, 3-oxo-1,5-pentane diisocyanate, isophorone diisocyanate, the cyclohexane diisocyanates, hydrogenated tetramethylxylylene diisocyanate, hydrogenated toluene diisocyanates, hydrogenated methylene diphenylene diisocyanates, toluene diisocyanates, the methylene diphenylene diisocyanates and the polymethylene polyphenylene polyisocyanates.

Claim 11 (Original): The amine-extended polyetherurethaneurea (PEUU) elastomer according to Claim 1, wherein the at least one isocyanate is 4,4'-methylene diphenylene diisocyanate (4,4'-MDI).

Claim 12 (Original): The amine-extended polyetherurethaneurea (PEUU) elastomer according to Claim 1, wherein the mixture b) contains about 50 to about 90 mole % of ethylene diamine (EDA) and about 10 to about 50 mole % of at least one aliphatic, asymmetric co-diamine.

Claim 13 (Original): The amine-extended polyetherurethaneurea (PEUU) elastomer according to Claim 1, wherein the mixture b) contains about 60 to about 80 mole % of ethylene diamine (EDA) and about 20 to about 40 mole % of at least one aliphatic, asymmetric co-diamine.

Claim 14 (Original): The amine-extended polyetherurethaneurea (PEUU) elastomer according to Claim 1, wherein the at least one aliphatic, asymmetric co-diamine is chosen from isophorone diamine (IPDA), 1,2-diaminopropane (PDA), 2-methylpentamethylenediamine, xylene diamine and 1,3-diaminocyclohexane.

Claim 15 (Original): The amine-extended polyetherurethaneurea (PEUU) elastomer according to Claim 1, wherein the at least one aliphatic, asymmetric co-diamine is 1,2-diaminopropane (PDA).

Claim 16 (Original): The amine-extended polyetherurethaneurea (PEUU) elastomer according to Claim 1, wherein the at least one aliphatic, asymmetric co-diamine is 2-methylpentamethylenediamine.

Claim 17 (Original): The amine-extended polyetherurethaneurea (PEUU) elastomer according to Claim 1, wherein the at least one aliphatic, asymmetric co-diamine is isophorone diamine (IPDA).

Claim 18 (Original): The amine-extended polyetherurethaneurea (PEUU) elastomer according to Claim 1, wherein the polar, aprotic solvent is chosen from dimethyl acetamide (DMAc), dimethyl formamide (DMF), dimethyl sulfoxide (DMSO), N-methyl pyrrolidone (NMP).

Claim 19 (Original): The amine-extended polyetherurethaneurea (PEUU) elastomer according to Claim 1 further including one or more additives chosen from anti-oxidants, UV stabilizers, anti-tack agents, dyes and pigments.

Claim 20 (Original): A process for making an amine-extended polyetherurethaneurea (PEUU) elastomer comprising:
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- a) an isocyanate-terminated prepolymer having a free NCO group content of from about 1 to about 2 %, which is the reaction product of,
 - (i) a stoichiometric excess of at least one isocyanate,
 - (ii) an isocyanate-reactive component containing a blend of a glycol and one or more ultra-low monol diols having a molecular weight of at least about 4,000 Da and an unsaturation of less than about 0.010 meq/g, and optionally,
 - (iii) a catalyst;with
 - b) a mixture of at least about 40 mole % of ethylene diamine (EDA) and up to about 60 mole % of at least one aliphatic, asymmetric co-diamine, in a polar, aprotic solvent, and
- collecting the reaction product.

Claim 21 (Original): The process according to Claim 20, wherein the glycol is chosen from tripropylene glycol (TPG), dipropylene glycol (DPG), propylene glycol (PG), polypropylene glycol (PPG) and polytetramethylene ether glycol (PTMEG).

Claim 22 (Original): The process according to Claim 20, wherein the blend has a number average molecular weight of between about 2,000 Da and about 9,000 Da.

Claim 23 (Original): The process according to Claim 20, wherein the blend has a number average molecular weight of between about 2,300 Da and about 3,700 Da.

Claim 24 (Original): The process according to Claim 20, wherein the one or more ultra-low monol diols has a molecular weight of at least about 6,000 Da.

Claim 25 (Original): The process according to Claim 20, wherein the one or more ultra-low monol diols has a molecular weight of at least about 8,000 Da.

Claim 26 (Original): The process according to Claim 20, wherein the glycol is tripropylene glycol (TPG).

Claim 27 (Original): The process according to Claim 20, wherein the unsaturation of the one or more ultra-low monol diols is less than about 0.007 meq/g.

Claim 28 (Original): The process according to Claim 20, wherein the unsaturation of the one or more ultra-low monol diols is less than about 0.005 meq/g.

Claim 29 (Original): The process according to Claim 20, wherein the at least one isocyanate is chosen from 1,2-ethylene diisocyanate, 1,3-propylene diisocyanate, 1,4-butylene diisocyanate, 1,6-hexylene diisocyanate, 1,8-octylene diisocyanate, 1,5-diisocyanato-2,2,4-trimethylpentane, 3-oxo-1,5-pentane diisocyanate, isophorone diisocyanate, the cyclohexane diisocyanates, hydrogenated tetramethylxylylene diisocyanate, hydrogenated toluene diisocyanates, hydrogenated methylene diphenylene diisocyanates, toluene diisocyanates, the methylene diphenylene diisocyanates and the polymethylene polyphenylene polyisocyanates.

Claim 30 (Original): The process according to Claim 20, wherein the at least one isocyanate is 4,4'-methylene diphenylene diisocyanate (4,4'-MDI).

Claim 31 (Original): The process according to Claim 20, wherein the mixture b) contains about 50 to about 90 mole % of ethylene diamine (EDA) and about 10 to about 50 mole % of at least one aliphatic, asymmetric co-diamine.

Claim 32 (Original): The process according to Claim 20, wherein the mixture b) contains about 60 to about 80 mole % of ethylene diamine (EDA) and about 20 to about 40 mole % of at least one aliphatic, asymmetric co-diamine.

Claim 33 (Original): The process according to Claim 20, wherein the at least one aliphatic, asymmetric co-diamine is chosen from isophorone diamine (IPDA), 1,2-diaminopropane (PDA) and 2-methyl-pentamethylenediamine, xylene diamine and 1,3-diaminocyclohexane.

Claim 34 (Original): The process according to Claim 20, wherein the at least one aliphatic, asymmetric co-diamine is 1,2-diaminopropane (PDA).

Claim 35 (Original): The process according to Claim 20, wherein the at least one aliphatic, asymmetric co-diamine is 2-methylpentamethylenediamine.

Claim 36 (Original): The process according to Claim 20, wherein the at least one aliphatic, asymmetric co-diamine is isophorone diamine.

Claim 37 (Original): The process according to Claim 20, wherein the polar, aprotic solvent is chosen from dimethyl acetamide (DMAc), dimethyl formamide (DMF), dimethyl sulfoxide (DMSO), N-methyl pyrrolidone (NMP).

Claim 38 (Original): The process according to Claim 20 further including adding one or more additives chosen from anti-oxidants, UV stabilizers, anti-tack agents, dyes and pigments.

Claim 39 (Original): In a method of making one of a medical glove, a scientific glove and a condom, the improvement comprising including the amine-extended polyetherurethaneurea (PEUU) elastomer according to Claim 1.

Claim 40 (Original): One of a medical glove, a scientific glove and a condom made by the process according to Claim 39.

Claims 41-52 (Cancelled).

Claim 53 (Original): In a method of making one of a medical glove, a scientific glove and a condom, the improvement comprising including the isocyanate-terminated prepolymer according to Claim 41.

Claim 54 (Original): One of a medical glove, a scientific glove and a condom made by the process according to Claim 53.